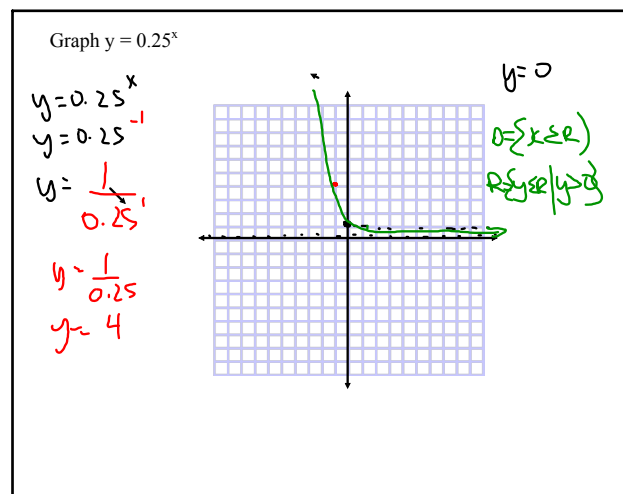
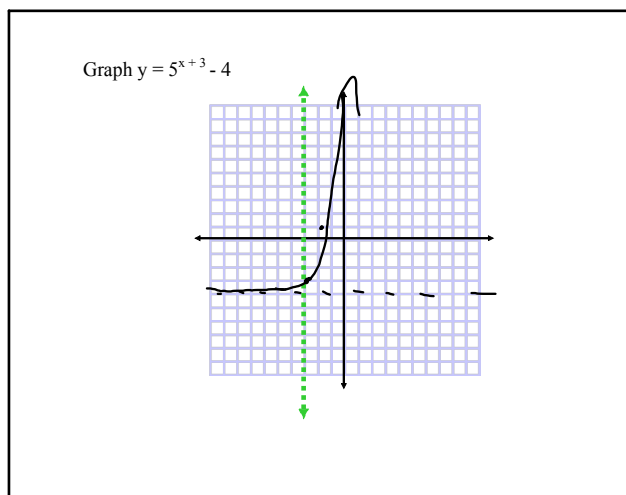


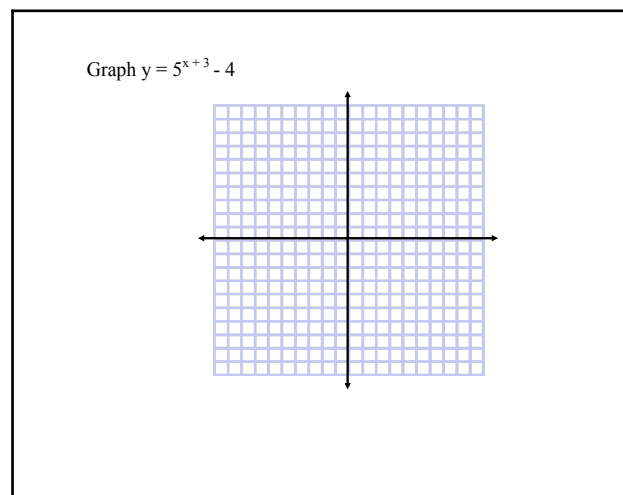
May 5-9:21 AM



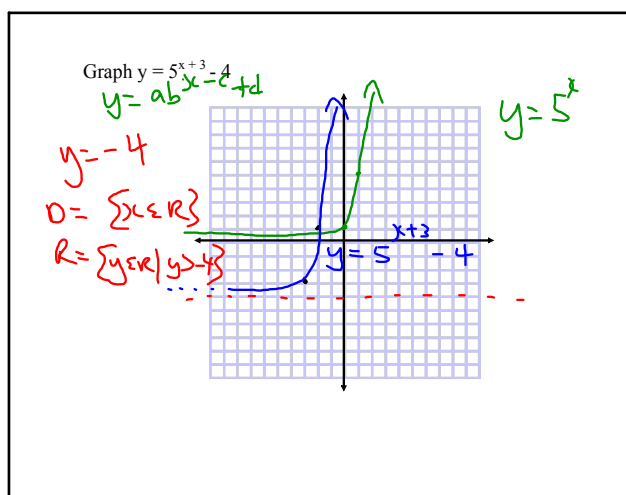
May 5-9:21 AM



May 5-9:21 AM



May 5-9:21 AM



May 5-9:21 AM

9. A biologist measures 1000 yeast cells in a culture at 12:00 noon. She predicts that, under current conditions, the culture should double every 50 min.
- Sketch a graph of the population of this culture for 200 min after noon.
 - Use your graph to determine the population of the culture in 2.5 h.
 - How can you adapt the graph to determine what the population of cells was 3 h before noon?

Dec 8-1:29 PM

9

graph 12:00 noon

$$P(n) = P_0(1+r)^n$$

$$P(n) = P_0(1-r)^n$$

$$P_0 = 1000$$

$$r = 1.0$$

$$P(n) = 1000(1+1.0)^4$$

$$P(n) = 1000(2)^4$$

$$n = 4$$

$$200\% / 50$$

$$0.22$$

$P(n) = 16000$

May 6-11:01 AM

14. Jerry invests \$500 in a bond that pays 5% per year. He will need the money for college in 3 years.
- Write an equation that models the growth of the money.
 - Use the equation to determine how much Jerry will have at the end of 3 years.
 - How much money did his \$500 earn in the 3 years?
 - Jerry thinks that if he keeps his money invested for twice as long (6 years), he will earn twice as much. Is this true? Explain your reasoning.

Dec 8-1:29 PM

$$P(n) = P_0(1+r)^n$$

$$P(0) = 500 \rightarrow 500(1+0.05)^3$$

$$P(n) = ? = 500(1.05)^3$$

$$r = 0.05 = 500(1.157)$$

$$n = 3 = 578.81$$

$500(1.05)^6$
 $500(1.340)$
 670.05

May 6-11:14 AM

1. Evaluate without using a calculator.

- 5^{-3}
- $\left(\frac{3}{4}\right)^2$
- $16^{-0.75}$
- $100^{-\frac{3}{2}}$

2. Write as a single power. Express answers with a positive exponent.

- $(6)^{-\frac{1}{3}} \times (6)^{\frac{5}{6}}$
- $\frac{10}{10^{-4}}$
- $a^7(a^6)^{-2}$
- $4\left(\frac{1}{4}\right)^{-4}$
- $\frac{7^8}{(7^2)^3}$
- $\frac{b^3(b^{-2})}{b^4}$

3. Write $\sqrt[6]{4^3}$ in exponent form, then evaluate.

2 a) $6^{-\frac{1}{3} + \frac{5}{6}} = 6^{\frac{1}{2}}$

b) $4\left(\frac{1}{4}\right)^{-4} = 4 \cdot 4^4 = 4^5$

c) $\frac{10}{10^{-4}} = 10^5$

d) $\frac{7^8}{7^6} = 7^2$

e) $\frac{b^3(b^{-2})}{b^4} = \frac{b^{1-2}}{b^4} = \frac{b^{-1}}{b^4} = b^{-5} = \frac{1}{b^5}$

f) $\sqrt[6]{4^3} = 4^{\frac{3}{6}} = 4^{\frac{1}{2}} = \sqrt{4} = 2$

Dec 8-1:27 PM

- $\left(\frac{3}{4}\right)^{-2}$
- $16^{-0.75}$
- $100^{-\frac{3}{2}}$

2. Write as a single power. Express answers with a positive exponent.

- $(6)^{-\frac{1}{3}} \times (6)^{\frac{5}{6}}$
- $\frac{10}{10^{-4}}$
- $a^7(a^6)^{-2}$
- $4\left(\frac{1}{4}\right)^{-4}$
- $\frac{7^8}{(7^2)^3}$
- $\frac{b^3(b^{-2})}{b^4}$

3. Write $\sqrt[6]{4^3}$ in exponent form, then evaluate.

Dec 8-1:27 PM

7. The population of a small town has increased at a rate of 1.5% per year since 1980. The town had a population of 1600 that year.
- Write the equation that models the growth in population of the town. Describe each part of your equation.
 - Use your equation to determine the population of the town in 2008.

Dec 8-1:27 PM